DOCUMENT RESUME

ED 346 538 CS 507 868

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TITLE A "New World" of Media Effects.
PUB DATE 23 May 92
NOTE 32p.; Paper presented at the Annual Meeting of the International Communication Association (42nd, Miami, FL, May 20-25, 1992).
PUB TYPE Speeches/Conference Papers (150) -- Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Audience Response; *Communication Research; *Mass Media; *Mass Media Effects; Mass Media Role; Measurement Objectives; *Media Research; *Research Design
IDENTIFIERS Research Suggestions

ABSTRACT

Media effects should not be thought of as either isomorphic or fragmentary. Instead, the similarities and differences between them should be studied. This approach would offer the potential to determine not only what the media effects are, but how they occur. This is possible through the discovery of patterns in research theories and findings. To this end, the causes, effects, and processes of media influence can be deduced. The causes of media influence can be identified as variations in exposure, content, and the form of the media themselves. There are five categories of media effects: level of analysis, type, nature, intention, and whether the effects are due to nature or form. To illustrate such classifications, two examples, reading ability and political participation, can be categorized. The determination of media effects and the underlying processes requires consistency in measuring those effects and in eliminating rival explanations. Therefore, limiting factors, such as permanence and conditional effects, also need to be identified. The limiting factors should determine the research design, measurement strategy, measures, and statistics that are to be used to measure effects. The complex and varied descriptions of "media effects" may have limited the ability to truly understand effects, suggesting that it is time to revise this concept according to different categorizations and research results. (One hundred and one references are attached.) (HB)

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A "new world" of media effects

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May 23, 1992

Paper to be presented to the Mass Communication Division
of the International Communication Association
May 20-25, 1992,
Miami, FL.

CS507868

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A "new world" of media effects

Abstract

We should not think of media effects as either isomorphic or fragmentary. Instead, we should look at the similarity and differences between them. This approach offers the potential to determine not only what media effects are, but how they occur. This is possible through the discovery of patterns in research theories and findings. To this end, this paper explicates causes, effects, and processes of media influence. Causes are identified as variations in exposure, content, and the form of the media themselves. Five categories of media effects are also identified -- level of analysis, type, nature, intention, and whether the effects are due to content or form. Determination of media effects and the underlying processes requires consistency in measuring those effects and in eliminating rival explanations. Therefore, limiting factors, such as permanence and conditional effects also need to be identified. The limiting factors should determine the research design, measurement strategy, measures, and statistics that are used to measure effects.

A "new world" of media effects

Over the last 70 years, communication researchers have sought to understand the influence of mass communication. This quest has examined a wide variety of media and of effects. It is not fully understood when effects may or may not occur, the probability of that occurrence, or the processes by which effects occur. Some of the variability in research results, however, could probably be improved by a thorough "explication" of the concept of media effects. Explication will tell how a variety of variables fit together. It will also tell us the extent to which we are falling short of studying what we really intend (Chaffee, 1991; Hempel, 1952). By explicating various conceptualizations of media effects, we may see the variety of "media effects" and the ways in which they can be identified as variables or concepts. Explication of common concepts will also allow us to group different variables so they are not unrelated (Foley, 1979). Such an examination may suggest that we should not think of general media effects, but rather as specific categories of effects. As a result of this organization, we may wish to hypothesize that particular effects are similar to some effects and different from other effects and why. A more thorough explication of media effects according to categories, therefore, may lead to the development of more precise theories of communication effects. This explication of media effects follows the notion that continued reconceptualization is a necessary part of research (Chaffee, 1991; Donohew & Palmgreen, 1981; Stinchcombe, 1968)

Explication also reminds us of the distinction between the conceptual and observational levels of research. At the conceptual level, there are ideas, concepts, and theories. Concepts provide a way of generalizing what we observe (Babbie, 1986). At the observational level, concepts relate to real-world variables. These variables are tested by observation and measurement. Operationalizations, however, are rarely accomplished consistently across different studies (Andison, 1977). Because the search for media effects is as much a craft as a science, it is better that they are not (Dervin, 1990). We are in the process of developing methods as well as theories. As such, theories, methods and results are examined simultaneously. In order for this simultaneous approach to work, however, we should look back from time to time at where we have been. We should examine what we have learned, rethink what we have studied, and how we should proceed. While a science starts off with concepts defined by common sense, our measurement of any concept improves as our theories of causes and effects improve (Stinchcombe, 1968). We are at such a crossroads in media effect research.

In response to this crossroads, there are three areas to examine in the explication of media effects. First, we need to examine the different causes of effects. Second, we need to examine what we mean when we say media effects. Third, we need to examine how these effects reflect a variety of research designs and measurement strategies. By examining how these three elements affect our study of effects we will be better able to determine what media effects are and how they occur. This paper, then, is an attempt to explicate the concept, evidence, and measurement of "media effects."

PRIMITIVE TERMS

At the risk of sounding obvious, the two most obvious primitive terms in media effects research are "media" and "effects." As obvious as that may be, research uses both terms in a variety of ways. Media, in this case, generally refers to the mass media of communication (Hovland, 1954). However, the media that have been the source of these examinations are different for three reasons. First, the media that have been studied over the last 70 years have changed. There are new media in 1992 that did not exist or were not "mass" in 1920. Radio, television, cassette tapes, video cassette recorders, interactive television, compact disks, videodiscs, and electronic mail come to mind. Communication researchers have attempted to measure the effect of every major mass medium as it appeared (Wartella & Reeves, 1985). It is important to keep in mind, however, that the media that were being studied varied over time. Second, some research studies the effect of a single medium (in the Payne studies, film). Other research, however, compares the effects of two or more media (Chaffee & Schleuder, 1986, for example, compare attention to television and exposure to newspapers). Measures of absolute effects, however, do not necessarily tell us about relative effects, and vise-versa. Third, a new consideration is that the traditional distinction between mass and interpersonal media has begun to blur with the emergence of new media. For example, specialized magazines, mailings, and electronic mail systems are not explicitly mass or interpersonal (Beninger, 1987). Therefore, we may need to examine the effects of an even larger variety of media than has been examined to date.

Concerning the primitive term "effects," I am reminded of an important idea that developed with Plato (Davidson, 1987). It is usually implied in theories, but rarely made explicit. It is important to distinguishing media effects which are due to the content of the message from those which are attributable to

the conveyance or form of that message. There are probably effects that are due to each. The effects of learning of the assassination of an important leader, a natural disaster, or a war are all examples that may be due to the information itself. Most of the effects that are studied in communication, therefore, are due to the content of the message and not an effect of its mediation. The largest exceptions are due to the speed of newer technologies in transmitting information (DeFleur & Larsen, 1958/1987) and the form of the mediation itself. For the former, the most notable example is our ability to keep up-to-date in news events from around the globe. For example, coverage of the "Gulf War" in Iraq consisted of quite a bit of "live" coverage. For the latter, the creation of film and television sometimes leads to the addition of visuals that would not otherwise be experienced. It is sometimes hypothesized that these fast-paced messages can overload the information processing system. As researchers approach each media effects question or research result we should ask, "Is the effect due to the information itself or due to the medium of transmission?" This morning, for example, I overheard a maintenance man's "walkie-talkie" sputter, "Come back to my office." Was his return a media effect, or not? Chaffee (1977) proposes that this distinction is not an important difference. He suggests that questions of effects, regardless of whether they refer to the content or delivery, provide information about the presentation of information, and the level of exposure. Although it may be useful to keep this distinction in mind, it may also be useful to consider the similarity. Davidson (1987) observed that, "communications...make effects possible" (p. 107).

Historically, of course, people have believed that mass communication has effects above those of the content of their messages. This belief has lasted for many years (Davidson, 1987). For example, Shakespeare's plays, Roman theater, penny novels, comic books, films, radio, television, and video games have variously been charged with a variety of effects. These effects include causing a loss in respect for humanity, sloth, a breakdown of character, and "cheapening" of the public tastes (Kubey & Csikszentmihalyi, 1990). Lippmann (1963) proposed that the media put pictures in our heads. The growth in media availability is often believed to affect leisure time activities (Condry, 1989; Schoenback & Becker, 1989). For example, television is believed to have affected the motion picture attendance and radio listening (Stuart, 1976). Other theorists have proposed that "the media" set the public agenda (Cohen, 1963; McCombs &

Shaw, 1972). This may exclude deviant groups (Shoemaker, 1984) and lead to a "spiral of silence" (Noelle-Neumann, 1985). Television is also proposed to be a major influence in the development of our self-image (Cathcart & Gumpert, 1983). As a result, mass media can be a potent socializing agent for children (Atkin & Gantz, 1978; Berry & Mitchell-Kernan, 1982) and into sex-roles (Durkin, 1985). Television may also alter our perceptions of reality (Gerbner, Gross, Morgan & Signorelli, 1986; Shapiro & Lang, 1991; Slater & Elliot, 1982). Media conventions are believed to affect the shared symbolic environment including comics and photographic styles (Beninger, 1983; Schwartz & Griffin, 1987). The media may also cause us to focus on moral judgments (Perkinson, 1991). Advertising is proposed to have an economic effect (Albion & Farris, 1981; Jones, 1989). These are various examples of "effects." More precise explication of the categories of effects, and their organization, will be examined under the literature search section.

PRELIMINARY DEFINITION

Tentatively we will operate on the definition of media effects as any outcome of the presence or use of a medium of communication that affects people's lives. These outcomes include the knowledge, attitudes, and behavior of individuals or of groups. For example, the radio has affected our lives. Radio has affected my life by allowing me to listen to music and to keep in touch with news. It has also made me more willing to commute longer distances. Radio also affects society by causing the rapid diffusion of information from place to place. Therefore, our news and political process are more immediate than it would be without the radio. Effects may arise from not only radio, but also of films, newspapers, magazines, televisions, audio cassettes, video cassettes, and electronic bulletin boards. We may focus on the effect of one each technology at a time, a comparison of different technologies, or an effect of communication technologies in general.

For the purposes of research, evidence for media having some effect usually requires that a variation in frequency of use, content, or aspects of particular technologies relates to the variation in some outcome. First, this involves explicating the various causes. Second, it involves explication of the effects themselves. The outcome effect needs to be identified and measured in some way. Third, there should also be a theory of story explaining how and why the two are linked. Demonstrating this link generally involves providing

proof of the relationship between the cause and the effects. This usually involves showing "covariation" between the proposed cause and the proposed outcome (Chaffee, 1977). Evidence of covariation is when variations in level of exposure, content, or technological factors are related to variations in the effects.

LITERATURE SEARCH

Causes of effects

Before an effect is investigated, theorists typically identify a cause of the effect. For example, children exposed to more violent programming may be more violent. Also, as more interactive technologies are used over the years, people may devote more leisure time to media use. Although this appears straightforward, there are two important issues relating to determining the causes of media effects. The first issue involves identifying exactly what the independent variable is. The second issue involves finding a means of measuring that variable. Explication of the various causes of these effects is the next part of our examination of media effects and is discussed below.

Differences in exposure or use

Effects are often believed to accrue from exposure to or use of a medium. For example, we can compare people who saw Roots to those who did not (Hur & Robinson, 1978). Alternatively, we can compare newspaper readers to television viewers (Chaffee & Schleuder, 1986). To demonstrate evidence, then, exposure or use becomes an important independent variable or "cause" of these effects. For example, research compares groups that were exposed to those that were not, or low versus high-frequency users. Exposure may be more applicable to non-interactive or one-to-many media such as billboards, radio, magazines, and television. Use may be more applicable to interactive or one-to-one media such as newspapers, telegraphs, VCRs, and electronic mail.

There are particular problems with survey designs including measuring exposure or use. These designs raise problems of recall, self-report, accurate identification of specific content, and a confound between self-selection and use time (McLeod & Reeves, 1980). Other types of research designs such as

laboratory research have their own problems. Typically, we vary whether people are exposed to something or not, the length of that exposure, or the nature of the medium. The problem that arises, however, is the audience's activity during that time (McLeod & Reeves, 1980). McLeod *et al.* (in press) observe that an audience may seek different gratifications, select information, attend or not, and make use of existing knowledge or strategies. This difference in activity level may naturally vary across media. Specifically, studies of information gain have shown that newspaper reading is a more active medium than television viewing (e.g., Chaffee & Schleuder, 1986). Television viewing, as it naturally occurs may be a more passive activity than newspaper reading (Kubey & Csikszentmihalyi, 1990). When applied in a laboratory setting,, however, the artificiality may create a higher level of activity than naturally occurs. Research, therefore, should be careful about changing the nature of media use when changing the research design.

Content

Another possible cause of effects is differences in the content of messages. It is more difficult than it might appear, however, to classify the content of media messages (McLeod & Reeves, 1980). The main difficulty calls to mind the wholist versus reductionist debate. In some instances, identifying the attribute that causes an effect is difficult because attributes are strongly correlated. This makes it difficult to establish which attribute is responsible for an observed relationship. A sad film, for example, may exhibit fewer cuts, darker colors, somber music, muted voices, and overall lower complexity measures. An investigation focused on one of these aspects may actually be measuring effects attributable to a correlated aspect. In other instances, the attribute that is responsible for an effect may not be a single or obvious one. Instead, the aspect of the message may be a combination (maybe an interaction) of attributes. Tying the results to a particular attribute would be wrong or misleading. For example, sexual material may also be violent (Donnerstein et al., 1975; Zillmann, 1982), aggressive messages may also be fast-paced (Tavris, 1988; Watt & Krull, 1977). Messages may also contain conflicting information. For example, may combine a visual image of two healthy people playing volleyball with a written Surgeon General's warning.

As has been observed elsewhere (Basil, 1991a; McLeod & Reeves, 1980), messages can be described along infinite dimensions. Only a few of these dimensions may be germane to a given study. The relationship between message attributes suggests that the failure to include a potentially confounding variable could affect the findings. However, even a multivariate analysis that included all relevant variables may fail to adequately exactly what is "in" a message. Message analysis has gone beyond manifest content to include the holistic message system, textual structure, symbolic representations of reality, and systems of conceptual frames. So despite efforts to "content analyze" a message, what constitutes a message is up to the individual researcher relative to a particular study. Content cannot be ascertained independent of what effect is being examined.

Nature of the medium

The third potential source of media effects is the nature of each medium. For example, people say that "television made people more isolated." One explanation is that people have limited leisure time; as a result, TV displaced the time we had for face-to-face conversation. Another explanation is that TV has developed "narrowcasting" to particular audiences, causing us to watch our own types of programs separately. Either explanation would result in isolating people. A more theoretical and practical approach, however, is not to investigate the effect of a technology itself. Instead, research should examine but how aspects of that technology have effects (Nass & Mason, 1990). These aspects include the level of interactivity, whether the channel flows from one-to-one or one-to-many, and the cost. In this way, we can use these factors as independent variables. This allows us to theorize what the effect of each medium will be. In addition, we can compare the same aspects across different technologies. In the above example, it was not the TV that affected the level of isolation; Instead, the time spent with TV or the way audiences are "segmented" was what led to less interaction among people with TV. Therefore, we may expect less face-to-face conversation with people who spend a great deal of time with media. We may also expect less conversation among people who use media that are more narrowly targeted.

Categorizing the effects

Concepts are a way of clarifying what is observed (Babbie, 1986; Chaffee, 1991). Typically, one of the first stages of research is identifying the effect to be studied and relating it to previous research. In this way we define exactly what is being studied. Categorization of the media effect to be studied, then, can be thought of not only as a means of grouping various effects, it is also a more precise definition of the dependent variable. So one important aspect of explicating the concept "media effects" is understanding the variety of "effects" that are investigated.

Despite the importance of categorization, it has a short history. In 1969, Weiss observed of Hovland's (1954) review of media effects, "No satisfactory or theoretically derived schema was available for categorizing media effects." Weiss did not provide one then, but suggested some relevant dimensions. Now, the most common category that may appear to be running through research is whether effects were observed or not. But close inspection reveals several attempts at categorizing these effects (Chaffee, 1977; Comstock, Chaffee, Katzman, McCombs & Roberts, 1978; Hovland, 1954; Katz, 1987; McLeod & Reeves, 1980; McLeod, Kosicki & Pan, in press; National Institute of Mental Health, 1982; Reeves & Hawkins, 1986; Schramm, 1962; Tannenbaum, 1968; Wartella & Reeves, 1985; Weiss, 1969, 1971). I will try to integrate those here. Specifically, across these 13 reviews of media effects, five categories are identified -- level of analysis, type, nature, intention, and whether the effects are due to content or form. This discussion of categories will identify the category, explain its history, and explain why the category is useful in examining, theorizing, and understanding media effects. To illustrate these five categories, I will classify two commonly studied media effects, reading ability and political participation.

Level of analysis

The first category applying to media effects is the unit, level, or domain of analysis (Chaffee & Berger, 1987; Flora, Maibach & Maccoby, 1989; Nass & Reeves, 1991). In this categorization, the level refers to the entity to which the effect occurs. Level, for example, can refer to an individual, a couple or small group, a network or organization, or a society or societies (Chaffee & Berger, 1987). For example,

accusing a candidate of being "a card carrying member of the ACLU" in a political debate may increase an individual's knowledge of the American Civil Liberties Union. It may also provide a basis of an argument for a married couple. Such an accusation may harm the reputation of that organization. It could also alter the turnout and the political leadership of a country, or indirectly affect the balance of power and distribution of resources around the globe.

The idea of categorizing media effects by the level of analysis is not a new idea in communication. Instead, it is an outgrowth of the fact that ours is a "multi-level" field (Paisley, 1984). An examination of reviews of mass communication effects shows that the level of analysis has been used to categorize media effects since 1954. Hovland (1954) categorized research levels as psychological, political, or sociological. Weiss (1969) suggested that social dimension of effects may affect "a few individuals or may extend to large groups of people or societies" (p. 85). Chaffee (1977) divided these as individual, interpersonal, and system units of observation. More recent approaches have categorized effects along a continuum from micro-level to macro-levels effects (McLeod & Reeves, 1980; McLeod et al., in press; Reeves & Hawkins, 1986).

The level of analysis for an effect represents more than simply whether to study an effect on an individual or a company. The level of analysis calls into question theories of what is "one" and how to sample (Chaffee, 1991; Nass & Reeves, 1991). The unit of analysis also makes certain theories more appropriate than others (Nass & Reeves, 1991). Level of analysis determines which theories may be applied to a phenomenon (e.g., Flora *et al.*, 1989). Finally, the unit of analysis changes the nature of what is an "effect." Importantly, the level of analysis varies (Stinchcombe, 1968). Level of analysis, then, indicates on whom the effect occurs.

Type of effect

The second category of media effects is the type of effect. As we examine whether the media has an effect, it should be careful to specify what type of effect is meant. This category of effect type differentiates whether the effect is a time use, economic, cognitive, attitudinal, affective, or behavioral outcome. Applying

this category of effect type to the previous example, a televised debate could affect knowledge, discussion, affect, economics, or political structure (an indirect behavioral [voting] effect).

The category of effect type is not new, either. Hovland (1954) categorized effects as entertainment, knowledge-information-skill, preferences and tastes, purchasing-voting. Weiss (1969) identified these as cognition, comprehension, emotional arousal, identification, attitude, overt behavior, interests, public taste, outlook-values and family life. Comstock *et al.* (1978) identified these dimensions as viewing behavior, learning, attitudes-motive, and politics-purchases. Murray and Kippax (1979) named use, violence, and cultivation of reality. Roberts and Bachen (1981) identified use, knowledge, agendas, beliefs, attention, comprehension, political socialization, antisocial behavior, prosocial effects, and sex-role socialization. Schramm and Porter (1982) named time use, knowledge, socialization, public opinion, media personalities, agenda-setting, advertising, and economic-social development. Roberts & Maccoby (1985) point to time use, uses and gratifications, cognitive, campaign, socialization, attitude-value, and cultivation of belief effects. More recent conceptualizations have simplified these types as attitudinal vs. cognitive vs. behavioral (Chaffee, 1977; McLeod & Reeves, 1980; McLeod *et al.*, in press). Also, Reeves and Hawkins (1986) distinguish not only information, persuasion, and entertainment effects, but also mental versus behavioral effects.

Specification of these different types of effects is important in determining which effect a researcher will look for. This distinction is also important because these outcomes are not synonymous nor necessarily determined by the same processes (Ray, 1973; Chaffee & Roser, 1986). Because of the potentially different processes, to consider knowledge, affective, and behavioral outcomes to be the same thing would muddy our conceptualization of media effects. The lack of a clear distinction could also muddy the conclusions we draw from the research findings and the theories that would be developed. For this reason, it is important to distinguish these types of outcomes.

Nature

The third category of media effects is the nature of those effects. Nature refers to whether that effect is one of activation, reinforcement, or conversion. The effect, then, may be in the direction of causing

the audience to begin, continue, or terminate a particular behavior or other type of outcome. Activation effects are novel to the audience, while reinforcement and conversion involve outcomes that are already established in the audience. In addition, reinforcement can be seen as getting the audience to continue a pattern while activation and conversion can be seen as motivating a change.

Hovland's (1954) classified effects as activation, reinforcement, or conversion. This category has also been classified as alteration or stabilization (McLeod & Reeves, 1980; McLeod *et al.*, in press; Reeves & Hawkins, 1986). In both of these cases, the distinction is between establishing a new pattern or continuation of an old pattern.

The nature of the effect may be important for campaign planners, media users, and in assessing effects. For example, advertisements about cigarette smoking may intend to get audience members to begin, continue, or stop smoking. The ads for each of these may be substantially different. Recipients may see the ads differently depending on their current smoking behavior. The mechanism as well as the possibility of reaching each outcome may be substantially different depending on the nature of the effect. Determining whether these outcomes are distinct or due to different mechanisms needs to be determined by research.

Intention

The fourth category for media effects is whether that effect is intended or not intended. In some instances the effect of a medium is what the writer or director has planned. For example, a documentary may inform the viewer about the life of a lion in Africa. However, the documentary may have an unintended effect of conveying information of the writer's perception of Africans or the role of women. Likewise, although situation comedies are usually intended to entertain us, they also convey information about appropriate sex-roles (Reeves & Hawkins, 1986).

The category of intention has been described as whether the effects are intended versus unanticipated (Hovland, 1954). Intention has also been described as intended versus non-intended (Comstock *et al.*, 1978; Roberts & Maccoby, 1985; Reeves & Hawkins, 1986). These categorizations may

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also distinguish effects that are attributable to the latent (as opposed to manifest) content of the program (Hovland, 1954).

The distinction between intended and non-intended effects may be important for two reasons. First, the possibility of non-intended effects suggests that we widen our definition of effects and pay attention to other potential effects of media. Second, it is possible that intended effects may occur by a different process or at a different level of probability than non-intended effects. For example, subjects have been shown to be less persuaded by a message when they were forewarned of an intention to persuade them (e.g., Allyn & Festinger, 1961). They have also been shown to be less persuaded when they have more capacity available to "counterargue" (Festinger & Maccoby, 1964). These are examples where intended effects were less powerful than non-intended ones. Several current theorists appear to consider non-intended effects may be more powerful than intended effects.

Content versus form

A wide variety of effects are believed to accrue from media. Some of these effects are a result of particular content or material. Others are a result of the form or structure of media (McLeod & Reeves, 1980). For example, increases in trips to the refrigerator or the bathroom during commercial breaks (on the hour, 10, 20, 30, 40, and 50 past) are more a result of the form of radio and television than any specific content. As McLeod *et al.* (in press) have observed, this belief that form was more important than content was a major thesis of McLuhan (1964). This thesis would appear to hold for trips out of the living room. It seems less likely, however, to hold for what is learned from radio or television.

Effects, then, have been identified which are outcomes of a medium as a whole versus outcomes of specific media content (Weiss, 1969). Similarly, effects can be attributable to physical or content-specific causes (Chaffee, 1977), content-specific versus diffuse-general (McLeod & Reeves, 1980; McLeod *et al.*, in press), or content-specific versus form-activity effects (Reeves & Hawkins, 1986). This categorization may also distinguish effects that are attributable to the latent (as opposed to manifest) content of the program (Hovland, 1954); latent effects are more likely to be intended.

It is possible that some effects of media may be more a result of specific content while others may be more a result of the general form. It is also possible that some effects are a result of both aspects. For example, some of the effects of sexually explicit material may be due to the presence of violence. However, they may also be due to the sexual content itself (Donnerstein, Donnerstein & Evans, 1975; Zillmann, 1982). Similarly, some of the effects of violent television programming may be attributable to the fast-paced form of the presentations themselves (Tavris, 1988; Watt & Krull, 1977). In the course of this research, we may need to distinguish which effects are caused by which aspect of the message or medium.

Classification of examples

For illustration, let's see how our two examples -- reading ability and political participation -- can be classified. Reading ability can be classified at an individual-level of observation. A systemic unit of analysis is not necessarily inappropriate, however. Lay people, for example, often talk about how television has reduced our level of reading as a society, and how this has affected our reading ability. Reading effects may also be classifiable as a cognitive effect of media. It is not clear, however, whether this process involves stabilization at a low level of reading or a reduction in the reading level; both options could be investigated. It is probably an unintended effect of the media. This may depend, however, on which medium you are referring to. For example, while printing of books may intend to increase reading and reading ability, comic books, radio, and television may be unintendedly reducing reading abilities. Reading ability may be an effect arising from the form of media -- radio and TV are more visual and verbal than written.

Political participation may be seen as a system-level effect; but this does not preclude its possible effect as an individual-level phenomenon or its investigation with individual-level measures. Participation can also be seen as a generally behavioral effect. It is, depending on the system, generally an intended effect of the political system and of the media. Participation is probably also attributable to seeing specific content such as debates rather than the form of a medium.

Through these two examples we can see that although concepts can be identified by name, we cannot be sure that these precisely identify which effect we mean. Precise categorization of effects depends

on specifying each of these factors for each effect. For example, Chaffee (1977) conceived of such a categorization as locating each effect within the categorical "matrix." According to the categorizations presented in this section, this locates an effect within a 4 by 6 by 3 by 2 by 2 (288-cell) grid. Unless each factor is specified, complete categorization will be more precise than "effects on reading."

Forms of evidence: Designs and measurement

At this point, we have explicated various causes of media effects. Second, we have explained the variety of these effects and a means of categorizing them. Next, we need to demonstrate whether these relationships actually occur. This involves operationalizing the variables to be studied, choosing a research design and method, measuring the variables in question, and testing that relationship statistically. The specification of research designs and measurement techniques is the last aspect of explicating the concept "media effects." Although I have discussed media effects as a conceptualization issue and an issue of evidence, they are also related to issues of methodology. It has been suggested that part of the variance in media effects may be attributed to methodological differences (McGuire, 1986). More specifically, part of the difficulty in determining media effects is the difficulty of consistency in measuring those effects and in eliminating rival explanations. Explication of media effects should also examine the research designs, measurement strategies, measures, and statistics employed. Each of these factors will be discussed below.

Permanence

One important limitation in demonstrating evidence of a media effect is the varying levels of permanence of effects. Of course, it may not be immediately obvious what the permanence of a particular effect is. Theories, however, should attempt this distinction. Research should investigate these distinctions. Historically, Hovland (1954) distinguished between long-term and short-term media effects. He talked about retention of information, persistence of opinion change, and retention of overt behavior changes. Comstock *et al.* (1978) made a distinction between short-term consequences and long-term consequences. McLeod and Reeves (1980), Reeves and Hawkins (1986) have made the same distinction. Short-term effects may be

fundamentally different from long-term effects. However, while viewers seek particular short term effects, their behaviors may indirectly lead to long term effects. This is an implication of uses and gratifications theories.

The possibility of impermanence of effects may, of course, reduce our ability to find and measure media effects. This is especially likely if effects are not assessed soon after they occur (Kelly & McGrath, 1988; Monge, 1990). A more important aspect of this category, however, is our ability to understand the processes behind the effects, their retention, and their permanence. Short-term effects may happen in a different way than longer-term effects, and we may wish to examine this possibility. McLeod and Reeves (1980) observed that most studies examine relatively short duration of effects, and this is especially true for laboratory studies. The use of short effect durations is one of the frequent criticisms of laboratory research. It is not, however, an inherent shortcoming. A few lab studies have examined longer-term effects (e.g., Greenwald, Pratkanis, Lieppe & Baumgardner, 1986; Flora & Maibach, 1990).

Direct or conditional effects

Another difficulty in demonstrating media effects (either evidence for or evidence against) is that in many instances effects are conditional on other factors. For example, violence effects are more likely to occur when children see the portrayals as real. McLeod and Reeves (1980) work through a series of six potential conditional effects. They demonstrate that failure to specify an important contingent condition obscures effects in the majority of these situations. "Traditional correlational procedures would totally miss the relationship, even if the conditional variable was measured and evaluated in the three-variable relationship (McLeod & Reeves, 1980: 23 [emphasis in original]).

The importance of conditional variables is theoretically important. It is also important practically because conditional relationships appear to occur for the bulk of media effects (McLeod & Reeves, 1980). Among the most robust of contingent conditions are that different people react to the same message in different ways. For example, children were shown by the Payne studies in the 1920s to have effects that depended on the individuals involved (Lowery & DeFleur, 1988: 31-54). The importance of conditional

variables has been identified in major reviews since 1954 (e.g., Hovland, 1954; Schramm, 1962). These have also been discussed as reinforcement effects (Weiss, 1969, 1971). Media effect research needs not only to pay close attention to identifying conditional variables, but needs to seek them out actively. This search for conditional variables emphasizes the importance of theorizing and studying what the conditional variables are and how these conditional effects occur. Later research, then, will be able to specify whether effects are direct or conditional.

Research designs

Decisions about designs are often conceived to be determined by the conceptualization (e.g., Anderson, 1987; Stempel & Westley, 1981). However, they are not always synonymous with conceptualizations and units of analysis (Chaffee, 1991; Nass & Reeves, 1991). Operationalizations and statistics are often approached in different ways in different studies (Andison, 1977; Basil, 1991b). This variety is not necessarily a negative. I propose that there are benefits of using multiple methods (Basil, 1990). Not only can each design be used for its own advantages, comparing the results of multiple methods provides additional information (Chaffee, 1977; Dervin, 1990). For example, when lab and survey research turn up the same results, we can be fairly sure that we have discovered a fairly robust relationship. When these findings conflict, we can consider why the results are different (Dervin, 1990). These conflicts may reflect differences in the way media effects are conceptualized, operationalized, or measured in various research designs.

One of the largest differences in communication research designs is the contrast between measures of effects as static concepts versus effects as a process (Cappella, 1977). Although it might sound ironic, static techniques are sometimes used by quantitative researchers to investigate process (Basil, 1991b). This is believed to be made possible by testing theories that make conflicting predictions (Greene, 1988) and with models that make simplifying assumptions. Understanding a basketball game, for example, can be gathered from cross-sectional information such as shooting percentages and rebounding; over-time samples such as quarter-by-quarter scores; or through watching the entire game. Each type of approach, however, has

particular meanings concerning the examination of effects. While the cross-sectional data offer clues about the process, clues that can be best interpreted by those who understand the process, the over-time data provide real process information. Critical and cultural studies theorists advocate complex models of process and feel that anything less obviates any possibility of understanding. They also suggest that quantitative researchers see media users as automatons. The use of these research designs and measurement strategies in documenting or disproving various effects will be discussed in this section.

Another important design consideration is the type of study. Surveys are used to show that the independent and dependent variables naturally covary. They are used at all levels of analysis. Lab experiments use random assignment and control over time ordering to eliminate alternative explanations. They are most frequently reflect study at the individual or interpersonal level of analysis. A compromise between these two alternatives, field experiments are fairly-well suited to demonstrating causality in natural settings at the interpersonal or organizational level. Aggregation is dangerous, however (Burnstein, 1981; Hannan, 1970; Rogosa, Brandt & Zimowski, 1987). Caution should be exercised in its use. Sampling people, for example, may not be appropriate to conceptualizations about countries (Nass & Reeves, 1991). Studies that propose to study the effects of mass media on countries by using a random survey of citizens may suggest a hesitation. At the conceptual level, theories talk about countries; at the operational level measures evaluate people.

Measurement strategies

Evidence requires measurement. This reflects a jump from the conceptual level to the operational level. Operationalization is more than simply choosing an indicator or a couple of indicators of a concept (Babbie, 1986). First, operational measures must correspond to operational levels that are appropriate for the conceptualization and theories being tested (Nass & Reeves, 1991). Second, the operationalization must also be at the level at which measurement procedures can be applied. The practicality or practical meaning of an operationalization, then, may suggest rethinking the conceptualization (Chaffee, 1991). Realistically, conceptualization and operationalization are probably a back-and-forth process. Measurement is important

because across all operationalizations, the independent variable will have to manipulated in an experiment, and measured in a survey (and probably measured in experiments as a manipulation check). The dependent variable will have to be measured in both designs. Measurement provides the foundation for testing any possible relationship.

Discussions of measurement often focus on reliability or validity. For the purposes of explicating media effects, however, it may be more important to investigate the nature and implicit assumptions of particular measurement and statistical approaches. For example, some studies use paper-and-pencil self-reports of self-efficacy, while other studies use observations of behaviors. A description of measurement and statistical approaches will be discussed next.

Measures

Measures of communication behavior can be categorized according to two major lines -- overt and covert. Overt measures such as paper and pencil measures are by far the most common in effects research. An example of a self-report is an attitude question. Among the main problems of these measures are the subject's ability and accuracy in self-reporting internal events and behaviors (Shapiro, in press). For example, young children have difficulty with verbal or written measures. There may also be biases caused by subjects' desires to appear knowledgeable, highbrow, or politically correct (Schuman & Presser, 1981; Sudman & Bradburn, 1974). Despite these problems, self-report is necessary for any qualitative information on internal events. Paper-and-pencil and self-report measures are particularly applicable at the individual level of analysis as reports of internal activities. Self-reports may be useful at the interpersonal or organizational levels. However, this may require considerable thought to ensure that the measures are not solely reflections of a particular individual.

Covert measures are often behavioral or observational outcomes. Sometimes they are described as passive observation (Chaffee, 1991). These measures of effects, therefore, are largely limited to behaviors that are exhibited. Covert behavioral measures have been put to good use on the violence question on individuals (e.g., Bandura, Ross & Ross, 1961). Covert measures have also been used to examine the effects

of television on interpersonal discussion (e.g., Fallis, Fitzpatrick & Friesdtad, 1985). Covert measures may also be used to examine the behavior of countries. In these all of these instances, it is necessary to conduct observations over a period of time.

Media use, cognitive, attitude, and affective measures are generally paper-and-pencil or self-report items. Behavioral measures are more frequently observational. Some unusual measures such as eye location, EEG and EKG are somewhere between self-report and behavioral measures (e.g., Alwitt, 1985; Anderson & Lorch, 1983; Lang, 1990). That is, while it is possible to measure these things quantitatively, it impossible to interpret them qualitatively. Because of their transience, effects that are of shorter duration are more likely to be observed with paper-and-pencil measures immediately after exposure. More permanent effects, meanwhile, may be more able to be observed. It is possible that the nature of effect (activation, reinforcement, conversion) affects the type of measurement. For example, people may be better at self-reporting novel behaviors; while established behaviors may be not noticed by the subject but readily observable by others. Effects that are intended might be less likely to generate reactivity to the measurement itself than non-intended effects. This may arise because the subject is made aware of a search for those outcomes. Reactivity may be especially likely with self-report methods, since the subject may become aware of what is being measured. It is often assumed that many of these paper-and-pencil self-report measures are precursors to later behaviors. Therefore, they are often pitched as more sensitive measures of the same concept. Some research, however, suggests that such "hierarchies of effects" are not necessarily equivalent (Chaffee & Roser, 1986; Ray, 1973). While the jury is out, the safest approach is to consider paper-and-pencil measures as potentially different from behavioral measures. It is also safer to consider measures obtained in survey, experimental, or field research, and cognitive, affective, and behavioral outcomes as potentially different.

Statistics

Decisions about statistics are conceived to be determined by the operationalization. Therefore, they are believed to occur at the end of the research process (e.g., Anderson, 1987; Stempel & Westley, 1981).

This, however, is not the case. Instead, the use of particular statistics depends on the unit of analysis, level of measurement, and the time-frame of the study (Babbie, 1986). For example, statistics depend on the level of measurement of the variable (categorical white-Black-Asian-Hispanic variables require different statistics than 1-to-100 scales) (Anderson, 1987; Weaver, 1981). The statistics for a design that compares 100 individuals at one point in time are also necessarily different from one which studies one country at 100 points in time.

Statistical approaches for measuring media effects can be divided into three broad categories. First, there are correlational approaches that compare several units at one point in time. For example, media use can be related to political knowledge. Second, there are repeated measures approaches which look at a unit or across several units over a few points in time. Panel studies of political knowledge gain have been done. Finally, there are time-series approaches which compare a unit over quite a few points in time. For example, the percentage favoring a particular candidate can be tracked over time. These statistical approaches are also related to the number of units being observed, and, therefore, to the level of analysis. Statistical power generally increases with longer time frames, but so does the difficulty in research and the number of potential threats to validity.

Choice of statistics should also be based on beliefs about the permanence, background pattern, and whether that effect was one of activation, reinforcement, conversion (Monge, 1990). For example, although all of these statistics are based on covariation as measured, examining how media can have a stabilizing function is difficult to test. This is despite the existence of theories of this type. We have few statistics which are useful for examining stability. Examining stability usually would require a comparison with another group that is destabilized or comparison with a continuing trend. These types of comparisons may be possible with correlational statistics.

Multivariate statistics are used increasingly in the investigation of effects. First, multivariate approaches are used for multiple independent variables. For example, this may test whether an effect is an outcome of content or form by controlling for the other. Second, multivariate approaches can control for alpha inflation from multiple dependent measures. For example, this may occur when examining several

potentially unintended effects. Third, multivariate statistics may also be used to determine whether exposure varies over time, whether content varies over time, and whether effects are direct or conditional. A study of reading ability and a study of campaign effects compared each of these possible explanations (Chaffee, Roser & Flora, 1989; Ritchie, Price, & Roberts, 1987). Both results suggest that careful analysis can provide data not only on the research question at hand, but also into examining potential alternative explanations. Research has come a long way from correlations that do not control for these other factors. The practical researcher, then, considers questions of statistics as being inevitably intertwined with conceptualization and research designs (Reeves & Geiger, in press). In these ways, researchers may use particular statistical approaches to rule out alternative explanations for effects.

EVALUATIVE REVIEW

Studies of media effects include a wide variety of conceptualizations. These conceptualizations can be broken down into level of analysis, type, nature, intention, and whether the effects are due to content or form. Each of these categories can be considered a potential conceptualization of media effects based on their occurrence as variables. Information about media effects can be found in the operational evidence that is used to document or disprove that effect. More information can be found in considering the research design or measurement that is employed to study it. Knowledge of each of these factors is necessary in developing a precise explication of a "media effect."

Conceptualizing, collecting evidence of, and measuring media effects is a rich and interwoven process. Decisions that are thought of as "methodological" are also "conceptual." Deciding that you wish to study reading ability or political participation at the individual level implies certain choices concerning evidence, research designs, and measurement techniques. Examining these questions at the social level means that you are necessarily talking about a different category of effects (Nass & Reeves, 1991). Each study reflects decisions about categorizations of effects, decisions about evidence, and decisions about research designs and measurement. All of these reflect on the nature of that effect. The level of analysis, for example, affects measures of use, content, and different theories of the underlying process (such as

economic development). Changing the level of analysis requires altering research theories, designs, measures, and statistics. For example, imagine an investigation of the relationship between television exposure and reading ability. A survey or a lab experiment may be used at the individual level of analysis (e.g., Armstrong & Greenberg, 1990; Ritchie et al., 1987). The societal level, however, may use secondary analysis of existing data. Different independent variables will also emerge. For example, research at the individual level research may examine the use of television, what the individual watches, and the individual's family socioeconomic status. At the societal level, research may examine the availability of television; television maybe constrained by the presence of electricity and television transmitters. Research may also examine programming in the country or hours of transmission or ownership of the media, and the country's economic level (such as G.N.P.). These two approaches, in fact, would turn up quite different results. At the individual level of analysis we would find a negative correlation between television use and reading ability, and a negative correlation between socioeconomic status and reading ability. At the societal level, however, we would find a positive correlation between television use and reading ability. In this case, reading ability is actually literacy rates. At the societal level, we would see a positive correlation between socioeconomic status and reading ability.

Although this is an extreme example, it was intended to illustrate how different conceptualizations of media effects have repercussions throughout the research endeavor. An accurate and precise explication of "media effects" relates to the categorization of that effect according to the level of analysis, the type of the effect, its nature, whether the effect was intentional or not, and whether it was an outgrowth of the message content or form. An explication of media effects is also determined by the evidence, research designs, and measurement used to document or disprove that effect.

CONCLUSION

Diverse areas of research can be called "media effects." These areas, however, are often divided along two specific categorizations -- level of analysis and topic area. First, the field is often divided along mass and interpersonal boundaries (Berger & Chaffee, 1988; Reardon & Rogers, 1988). This is an instance of using the level of analysis to divide what we are investigating. Second, the field is categorized by topic

area. Within the International Communication Association, for example, there are information systems, interpersonal, mass communication, organizational communication, intercultural, political, instructional, health, and philosophy divisions. This is an instance of using the topic to categorize our investigation.

Rarely, however, is research compared by the other categorizations of effects that have been explored here. These categorizations include whether the effects are due to exposure, content, or the nature of the medium; the type, nature, intentionality, whether effects are due to content or form; whether the effects are permanent or conditional, and whether the effects are measured with paper-and-pencil tests or through observation, and observed cross-sectionally or over time. These categorizations should be considered. They would allow us to investigate similarities and differences in media effects and research results. As a result, it may not be necessary to research each cell in the 288-cell categorization matrix. Rather, these types of meta-analysis would help to understand exactly what media effects are and how they occur through the discovery of patterns in these results. For example, particular rows or columns of this matrix may exhibit similarities in causes or conditions that may lead us to discovery of theoretical similarities.

The complex and varied descriptions of "media effects" used in empirical research may have limited our ability to understand effects. It may have made it more difficult to provide conclusive evidence either in support of or in argument against media effects. Too often we think of research variables as isolated and fragmentary (Foley, 1977). So at this crossroads it is important that we begin moving away from conceptualizing media effects as an amorphous blob, and look at the similarity between specific effects. This may be necessary because different effects involve different underlying processes. Some of these processes may occur directly from exposure. Some may occur as a result of specific content. Some may occur as a result of the nature of the medium. Effects may occur conditionally. They may only occur to certain audiences at certain levels of exposure. Effects may be contingent upon certain existing conditions such as viewers' predispositions. They may be temporary or permanent. Although we have been using "media effects" as a tentative concept, it is time to revise this concept according to different categorizations and research results (Chaffee, 1991; Donohew & Palmgreen, 1981). It is in this direction that communication can best progress toward developing theories and an understanding of "media effects."

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